

## 2005 Disease Prevention and Spray Guide (Head/Stem & Leafy Brassicas)

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**Soilborne diseases.** There are several soilborne diseases that affect brassicas. These diseases can attack the crop from seedling stage through harvest and are referred to as collar-rot diseases. Many of these diseases, however, attack the foliage and are deposited there by water splash or by physical contact between the leaves and the soil. Early, seedling crown rot can be caused by either *Rhizoctonia solani*, and species of *Pythium*. The disease caused by *Rhizoctonia* is more problematic in the fall and is called wirestem due to the lesion appearing like a skinned wire.

**Recommended practices in chronological order are as follows:**

1. Rotation with non-brassica crops reduces potential inoculum of most soilborne diseases, especially club root. Avoid planting brassicas behind legumes or carrots as they may allow *Rhizoctonia* to build up.
2. Avoid low-lying, wet areas and poorly drained conditions that favor *Pythium* and club root.
3. Deep turning with a moldboard plow will help with *Rhizoctonia*.
4. An adequately high pH (6.2-7.0) will reduce losses to club root.
5. Fumigation with methyl bromide under plastic will suppress all soilborne diseases. Other fumigants that suppress diseases are Telone C-35, K-Pam, Vapam, and chloropicrin. Telone products are nematicidal.
6. Terraclor can be used at or prior to planting to suppress club root. Both Terraclor and Amistar/Quadris will suppress wirestem.
7. Products containing mefenoxam (Ridomil, UltraFlourish) can suppress losses to *Pythium*.

**Foliar diseases.** There are several foliar diseases of brassicas. Black rot (*Xanthomonas campestris* pv. *campestris*) is a problem on cabbage and collards almost every year. There is no real resistance to this pathogen in brassica crops. Generally, black rot control starts with clean seed and transplants. In-field suppression of black rot is achieved by avoiding working in wet foliage and copper + maneb tank-mixes sprayed once a week. Downy mildew (*Peronospora parasitica*) is a problem on brassicas almost every year. This disease causes angular lesions on leaves beginning with older growth and gradually infects younger leaves. Chlorothalonil products rotated with Aliette + Maneb have been used in cabbage and head and stem brassicas while the Aliette + Maneb mix has been the only labeled option in leafy brassicas until lately. Now Forum (dimethomorph) can be used in leafy brassicas for downy mildew. Studies have shown that the addition of a phosphite material to Maneb will enhance downy mildew suppression. Alternaria leaf spot is another problem disease of cabbage and leafy greens that can be suppressed with rotation and deep turning. Alternaria leaf spot is also easily suppressed with sprays of chlorothalonil (cabbage and head and stem brassicas) or Quadris/Amistar or Cabrio. Endura and Switch are also available for use on cabbage and head and stem brassicas and are effective on Alternaria leaf spot. Sclerotinia blight or raisin head affects cabbage and leafy greens to some extent every year and is primarily a soilborne disease. Avoid fields for several years where this disease has been a problem. Use Endura preventively to suppress Sclerotinia. Cercospora and Cercospora leaf spots are more of a problem on turnip and mustard greens and can be avoided using a 2-3 year rotation. However, Cabrio is an excellent fungicide that will control these leaf spots if sprayed at or just before disease onset.

**Recommended practices in chronological order are as follows:**

1. Rotation with non-brassica crops reduces potential inoculum for several diseases.
2. Avoid working wet fields.
3. Spray fungicides and bactericides preventively.

### Spray Schedule for Brassicas and Cabbage

<u>Transplanting or Seedling Emergence</u>	<u>Head + Leaf Development</u>	<u>Harvest</u>
Quadris/Amistar or Terraclor for wirestem Ridomil products for Pythium	Bravo rotated with copper + maneb for cabbage (black rot) Bravo rotated with Quadris/Amistar or Cabrio for leaf spots	
	Substitute Bravo with Maneb or Aliette + Maneb for leafy brassicas Use Endura, Switch or Forum for Sclerotinia, Alternaria and downy, respectively, as needed.	